

BOOK REVIEW: Species and Communities in Extreme Environments *Festschrift towards the 75th Anniversary and a Laudatio in Honour of Academician Yuri Ivanovich Chernov*

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(Russian volume), 530 pp. (English volume)

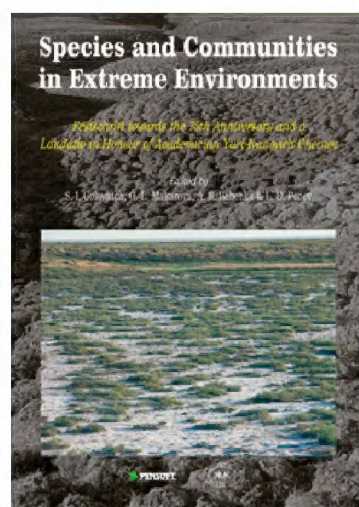
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Yuri Ivanovich Chernov, a prominent Russian community ecologist and biogeographer, and a member of the Russian Academy of Sciences, celebrated his 75th birthday in January 2009. Chernov received a surprise gift from his students and colleagues: two volumes of biological papers, one in Russian, another in English. Although these two volumes have identical names and even identical covers, their contents in fact are not identical; the Russian volume contains 20 papers, and the English, 21.

Both volumes are divided into three main sections (1) Ecology of extreme environments; (2) Geographic aspects of ecological studies; and (3) Urban ecology. Each volume ends with a “List of major research publications of the Academician Yuri Ivanovich Chernov”.

The first section of the Russian volume contains two papers that are absent in the English version: L.L. Zanolka, “Grasslands in mid-Siberian sector of the Arctic...” and

O. A. Khruleva, “Arthropod assemblages of the Wrangel island in a context of recent and Pleistocene tundra-steppe insect faunas of the northeastern Asia”. The first section of the English volume contains a paper missing in the Russian one, by D. I. Berman et al., “Winter in the life of ants in the northeastern of Asia”. Also, the English volume includes two additional papers in its second section, by I. Yu. Chernov (Yu. I. Chernov’s son) – “Latitudinal-zonal trends in the distribution of yeasts” and by V. Peneva et al., “Nematode communities in *Deschampsia* microhabitats in polar and alpine deserts of Arctic and Antarctic.”

Twin volumes also differ in their illustrations. Color illustrations in the Russian version are placed in the end of the book. In the English version, some of these illustrations are located in the text, and some appear in black-and-white.

The Russian volume is edited by a group of Russian scientists, all of them former students of Yuri Chernov (A. B. Babenko, N. M. Matveyeva, O. L. Makarova, and S. I. Golovatch). The editors of the English version, in addition to three Russian scientists (S. I. Golovatch, O. L. Makarova, and A. B. Babenko), include the well-known Bulgarian coleopterologist and book publisher Lyubomir D. Penev, who was Yu. I. Chernov’s doctorate student.

The authors of both volumes are mainly Russian researchers; international contributors include scientists from the United Kingdom, Sweden, Denmark, Germany, USA, and Bulgaria.

The section on the “Ecology of extreme environments” includes general papers addressing modern data and ideas on the effect of the global climatic changes on the Arctic nature (V.T. Callagan & M. Johansson, “The changing, living tundra: a tribute to Yuri Chernov”) as well as more specialized works on certain animal, plant, and fungal taxa of the Arctic in general, its specific areas, or globally. All animals discussed here are arthropods: Acari of Greenland (O. L. Makarova & J. Böcher), spiders of the Russian tundra zone (Yu. M. Marusik & K. Yu. Eskov), Collembola of the tundra zone (A. B. Babenko), ants of the northeastern Asia (D. I. Berman et al.), Diplopoda of the extreme habitats (S. I. Golovatch), and Wrangel Island arthropods (O. A. Khruleva). Non-animal papers cover angiosperm plants as well as bryophytes, lichenicolous fungi, microfungi, yeasts, and myxomycetes. The last paper in this section discusses the issues of conservation of the terrestrial ecosystems in the Russian Arctic. The papers on plants, fungi, and protests are written by such known researchers as Yu. K. Novozhilov, M. Schnittler, S. L. Stephenson, M. P. Zhurbenko, I. Yu. Kiritsideli, L. L. Zanolka, and A. A. Tishkov.

The second section (“Geographic aspects of ecological studies”) contains papers on vascular plants of the Eastern Europe (O.V. Morozova), yeasts (I. Yu. Chernov; English volume only), bryoflora of Russia (M. S. Ignatov et al.), spiders of the Dzhanybek Research Station (T. V. Piterkina), local ground beetle fauna in the Lake Elton region in southern Russia (K. V. Makarov & A. V. Matalin), Lepidoptera of the Urals (I. A. Bogacheva), spiders of the steppe habitats of the Urals (S. L. Eshyunin), and nematodes of the Arctic and Antarctic (V. Peneva et al.; English volume only).

The third section, on urban ecology, includes works on Collembola in extreme natural and anthropogenic environments (R. I. Kuznetsova) and on urban woodland birds (N. S. Morozov).

A considerable number of spider papers is included (three only on this group, and one including spiders among other arthropods). Some papers present the results of original studies, never published before, for example T.V. Piterkina's work on Dzhanybek spiders, or O. A. Khruleva's on the terrestrial arthropods of the Wrangel Island. Other papers present reviews of long-term studies done by such researchers as D. I. Berman, N. V. Matveyeva, I.Yu. Chernov, etc., or literature reviews combined with the original data (A. B. Babenko, O.V. Morozova, and other authors). At least one paper includes only data from literature (A. I. Tishkov).

At least one-half of the papers in both Russian and English volumes are devoted to the North. Especially interesting, in our opinion, are contributions by S. I. Golovatch and A. B. Babenko. The first addresses Diplopoda, a poorly studied arthropod group – there is virtually no literature on this myriapod order in Russian. The subject of the paper is quite unusual and interesting, and it reads well. The paper of A. B. Babenko has an intriguing title (“Are there many tundra species among Collembola of the tundra belt?”). Its conclusions are quite unusual and impressive: the Collembola are the dominant arthropod group in the Arctic (both in species number and density) so it seems that there should be many tundra-adapted species. In fact, the researcher shows that the number of specialized tundra species of Collembola is very low – most Arctic species avoid tundra communities.

An interesting, and somewhat paradoxical, conclusion has N. M. Matveyeva's paper. Contrary to a popular opinion that plant communities of high latitudes are impoverished, she demonstrates that the species diversity in the Arctic plant communities is often higher than in the most biomes located in more favorable conditions and further south. In the zonal communities in various subzones of the tundra, the standard plots (100 m²) yield from 110 to 182 plant species (including non-seed plants). Possible reasons for such richness are explained by the author.

Many would find interesting the contribution of Yu. K. Novozhilov et al. about very peculiar organisms, the Myxomyceta of the Arctic and arid regions. Although most myxomycetes are cosmopolitan, some of these amoeboid protists are endemic to Arctic and arid regions, although uncommon there.

Clearly interesting for both botanists and biogeographers are the contributions on bryophytes of Russia and vascular flora of East Europe. A map of species diversity of the mosses is quite impressive: the Northeast (without Chukotka) with its 518 species is ahead of Yakutia (484 species), Central Siberia with the northern Cisbaikalia and Transbaikalia (501), West Siberia (307), Central Russian Plain (406). The higher regional diversity of moss species in Russia is only found in the Northwest (from the Leningrad Oblast to Kola Peninsula) (602 species), South Siberia (621), North Caucasus (553), and the southern Far East (628). It is possible that if Chukotka numbers are combined with the Northeast, the number of moss species in Western Beringia would exceed that in the extreme Russian Northwest.

It is difficult to evaluate and list all the good and interesting information presented in all contributions. It is, naturally, easier to find obvious drawbacks, some of which could be listed here (especially pertaining to the Northeastern Asia). In A. A.

Tishkov's paper (Table 3, p. 289), data on various northern natural reserves are listed. It is unclear why Kronotsky Reserve, located south of 60°N, is listed in this table while Pechoro-Ilychsky and Kivach are missing. The Wrangel Island data listed in this paper are considerably lower (376 vascular plant species, 148 bird species, with 51 nesting, and 8 mammals) than reported by M. S. Stishov (2004) who listed for this reserve has 409 species vascular plant species, and 169 bird species, among them only 47 nesting). Stishov reported 11 species of terrestrial mammals, of which two are synanthropic, two are introduced, three are very rarely visiting (wolf, volverine, red fox); the polar bear is not entirely terrestrial; therefore there are only three aboriginal mammals – polar fox and two lemming species. These minor inconsistencies do not affect the general contents and conclusions of this informative paper.

Small criticisms could include what appears an overly detailed, for such a monograph, listing of species' authors for taxonomic works (Esyunin, Piterkina, Makarov and Matalin). It is not clear why in a faunistic table (pp. 398–399) S.L. Esyunin listed full authors of all species, with a detail not common even in all taxonomic works, e.g. “*Gnaphosa saurica* Ovtsharenko, Platnick et Song, 1992” or “*Zodariellum nenilini* (Eskov in Eskov et Marusik, 1995)”. Authors of some species are repeated in the text, e.g. *Zodariellum nenilini* (Eskov, 1995), while for others even their full generic name is not listed. Data in summaries not always matches data in the text, i.e. some regional numbers of moss species in the English summary on p. 334 differ from the Russian text. The detailed text captions accompanying Figs 1–3 in Callagan & Johansson chapter (Russian volume) are given in English, which looks inconsistent. Some English terms are not coordinated, e.g. “tundra zone” and “tundra belt” probably should not be used as synonyms in the same book. A few typing errors could be found in English spelling in the Russian volume: for example, on p. 172, a Canadian acarologists' name is both spelled correctly as Behan-Pelletier and misspelled as Pehan-Pelletier. On p. 30, the term given in English, “DNA finger-printing”, should not be hyphenated. K. Eskov's last name carries an apostrophe after “s” on p. 92 but not on p. 123; and his patronymic is abbreviated as both “Yu.” and “Y.” Finally, a strange recent practice of translating the Russian administrative division “Oblast” as “Area” (see p. 374) is clearly semantically incorrect, and should be advised against.

Without any doubt, this book will become a standard reference for the broad spectrum of biologists, zoologists, botanists – especially those who are involved in the studies of the North.

The Russian volume can be ordered from KMK publishers (Kirill G. Mikhailov, mikhailov2000@gmail.com). The English volume (at EUR 80) can be ordered on Internet from PENSOFT, at <http://www.pensoft.net/notes/14336.stm>

References

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